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Application Serial Number 10/554,400

AMENDMENTS TO THE CLAIMS:

1. (currently amended): A device (30) giving indications to the operator of a work machine which works on a construction surface of a current work object, monitoring at least one reference marker located in the vicinity of the construction surface, characterized in comprising:

an acting component of the work machine that acts directly on the construction surface of the current work object;

a measurement device (20) which monitors the construction surface, a plurality of reference markers located in the vicinity of the construction surface, and the acting component located in the vicinity of the construction surface, to measure the position of the construction surface of the current work object, the position of [[the]] a plurality of reference markers located in the vicinity of the construction surface, and the position of the acting component located in the vicinity of the construction surface, while said work machine is performing work;

a reference point detection unit (102) to detect [[the]] two reference points corresponding respectively to two reference markers included in said plurality of reference markers located disposed in the vicinity of said construction surface;

a virtual line calculation unit (104) to calculate from the <u>two</u> reference points a virtual line, passing through the <u>two</u> reference point and corresponding to a construction surface target line that is to be formed by the acting component;

a display data creation unit (110) to create display data to display images indicating the positions of at least said construction surface and said virtual line, on the basis of said positions measured by said measurement device and said virtual line calculated by said virtual line calculation unit; and

a display device (34) to receive said display data from said display data creation unit and display said images to the operator on a display screen.

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- 2. (currently amended): The device according to claim 1, characterized in that said display data creation unit (110) creates said display data in such a manner that an image is displayed which also depicts the position of other said plurality of reference markers in addition to the positions of said construction surface and said virtual line.
- 3. (currently amended): The device according to claim 1, characterized in that said measurement device (20) is disposed in such a manner to move or turn direction in unison with said work machine, when said work machine moves or turns direction, whereby, even if said construction surface moves due to said work machine moving or turning direction, the positions of said construction surface and other said plurality of reference markers located in the vicinity of said construction surface are measured and an image indicating the positions of said construction surface and said virtual line is displayed.
- 4. (currently amended): The device according to claim 1, characterized in that said measurement device (20) determines the positions of said construction surface and other said plurality of reference markers on a continuous basis, whereby the images indicating the positions of said construction surface and said virtual line are displayed on the display screen substantially in real-time.
- 5. (currently amended): The device according to claim 1, characterized in that said reference point detection unit (102) detects a position satisfying prescribed geometrical conditions, from the positions of said construction surface and other said plurality of reference markers measured by said measurement device, as said reference point.

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- 6. (currently amended): The device according to claim 1, characterized in that said reference point detection unit (102) detects a position specified by said operator, from the positions of said construction surface and other said plurality of reference markers measured by said measurement device, as said reference point.
 - 7. (canceled)
- 8. (previously presented): The device according to claim 1, characterized in further comprising:

an acting component detection unit (106) for detecting the position of the acting component (6) which acts on said construction surface,

wherein said display data creation unit (110) creates said display data in such a manner that said images depict the position of said acting component in addition to the positions of said construction surface and said virtual line, on the basis of the position of said acting component detected by said acting component detection unit.

- 9. (currently amended): The construction target indicator device according to claim 8, characterized in that said acting component detection unit (106) detects the position of said acting component from the positions of said construction surface, and other said plurality of reference markers, and said acting component measured by said measurement device.
- 10. (previously presented): The device according to claim 9, characterized in further comprising an acting component position correction unit (108) for correcting the position of said acting component detected by said acting component detection unit, by means of a prescribed offset amount;

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wherein said display data creation unit (110) creates said display data in such a manner that an image is displayed which depicts the corrected position of said acting component in addition to the positions of said construction surface and said virtual line, on the basis of the position of said acting component corrected by said acting component position correction unit.

11. (original): The device according to claim 1, characterized in that displacement sensors for measuring the displacement of a plurality of components of said work machine are provided in said work machine; and

said acting component detection unit (106) detects the position of said acting component on the basis of the displacement of said plurality of components measured by said displacement sensors.

12. (previously presented): The device according to claim 1, characterized in that said display data creation unit (110) creates emphasized display data for displaying an emphasized image which shows an enlarged view of positional error between said construction surface and said virtual line, in response to a request from said operator; and

said display device (34) displays said emphasized image by receiving said emphasized display data from said display data creation unit.

13. (canceled)

14. (currently amended): A method for giving indications to the operator of a work machine which works on a construction surface of a current work object monitoring a plurality of reference markers located in the vicinity of the construction surface, characterized in comprising the steps of:

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monitoring the construction surface, a plurality of reference markers located in the vicinity of the construction surface, and the acting component of the work machine that acts directly on the construction surface of the current work object, located in the vicinity of the construction surface;

measuring the position of a construction surface, which is a current work object, [[and]] the positions of a plurality of reference markers located in the vicinity of said construction surface, and the position of the acting component located in the vicinity of the construction surface, while said work machine is performing work;

detecting two reference points corresponding respectively to the two reference markers disposed included in said plurality of the reference markers located in the vicinity of said construction surface; , from the measured positions of the construction surface and the reference markers;

calculating from the two reference points a virtual line passing through the two reference points and corresponding to a target surface that is to be formed by the acting component; on the basis of said detected reference points; and

creating an image indicating the positions of at least said construction surface and said virtual line, on the basis of said measured position and said calculated virtual line,

providing a display screen, and displaying said image on the display screen.

15. (previously presented): The device according to claim 1, comprising a laser distance measurement device that irradiates a laser beam and continuously changes the angle of elevation of the laser beam at a prescribed cycle to scan the laser beam through a scanning region.

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- 16. (previously presented): The method according to claim 14, comprising providing a laser distance measurement device that irradiates a laser beam and continuously changing the angle of elevation of the laser beam at a prescribed cycle to scan the laser beam through a scanning region.
- 17. (previously presented): The device according to claim 1, wherein the work machine is an earth-working machine and the work object is earth.
- 18. (previously presented): The method according to claim 14, wherein the work machine is an earth-working machine and the work object is earth.
- 19. (previously presented): The device according to claim 1, comprising an input device whereby the operator enters a designated reference point corresponding to a reference marker.